

Notice of Allowability

Application No.

10/558,997

Examiner

Chukwuma O. Nwaonicha

Applicant(s)

MUELLER ET AL.

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4 October 2007.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 4 October 2007.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1-10 are pending.
4. The 102 and 103 rejections have been withdrawn because the prior art reference cited does not teach all the limitations of the claimed invention.

The application is a 371 of PCT/DE03/02030 06/18/2003.

Allowed Claims

Claims 1-10 are allowable over the prior art of record.

Reason For Allowance

The following is an examiner's statement of reasons for allowance: A search of the prior art failed to uncover any reference that anticipates or renders obvious a claim a process for producing reactive organic compounds containing poly-DOPO in the presence of acetylenically unsaturated compounds having reactive groups and a flame retardant as claimed by applicants.

The closest prior arts are Matsumoto et al., {JP 01284521} and Huang et al., {CN 1339538}. Matsumoto et al. teach a process wherein polyesters are manufactured by copolymerizing of ester-forming functional group-containing unsaturated compounds followed by polycondensing with $\text{PHR}_1\text{R}_2(\text{O})_n$. Thus, a slurry of ethylene glycol and terephthalic acid was added to bis(β -hydroxyethyl) terephthalate and its oligomers and heated at 255° , then treated with maleic anhydride at 260° in the presence of GeO_2 to

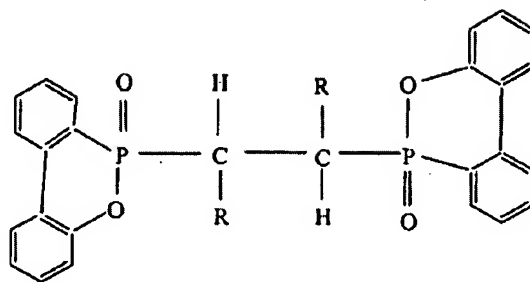
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give a polyester, which was treated with 2.0 mol% of 9,10-dihydro-9-oxa-10-phosphophenanthrene-10-oxide (DOPO) to give a fire-resistant polyester. See abstract.

On the other hand, Huang et al. teach a fire-resistant phenolic epoxy resins containing DOPO wherein the DOPO is hydroxyl functionalized.

Matsumoto et al. process for producing reactive organic compounds containing poly-DOPO in the presence of acetylenically unsaturated compounds differ from the instantly claimed process in that applicants' process specifically employ acetylenically unsaturated compounds to produce reactive organic compounds containing poly-DOPO while Matsumoto et al. teach a process wherein polyesters are manufactured by copolymerizing of ester-forming functional group-containing unsaturated compounds followed by polycondensing with DOPO. The two processes are different from one another and they produce different end products.

On the other hand, Applicants claimed flame retardant differ from Huang et al. fire-resistant phenolic epoxy resins in that Applicants claim a flame retardant with functionalized DOPO (as shown below); wherein R is independently selected from carboxyl, carboxyalkyl, carboxyaryl, hydroxyalkyl, alkoxyalkyl, aroxyalkyl, hydroxyaryl, alkoxyaryl or aroxyaryl while Huang et al. teach a fire-resistant phenolic epoxy resins wherein R is hydroxyl group. These differences are not readily apparent and would not have been suggested to one of ordinary skill.



All claims (1-10) are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

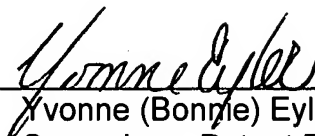
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne (Bonnie) Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.
Patent Examiner
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A handwritten signature in cursive script, appearing to read "Yvonne Eyler", is written over a horizontal line.

Yvonne (Bonnie) Eyler
Supervisory Patent Examiner,
Technology Center 1600